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will just be "talking shop." Departmental heads should also hold regular meetings with their staff to allow safety concerns and ideas to be discussed.

3.3.4.7 The importance given by the CEO and all levels of management to resolving safety issues at these meetings will demonstrate the company's commitment to safety.

3.3.4.8 The structure and number of committee's will depend on the size of the organisation and it might be sufficient for a small operation to manage with one committee covering all areas. Larger organisations may require a formal structure of safety review boards and safety committees to manage their requirements. A method should also be established for all employees to have a written or verbal input into the appropriate meetings.

3.3.4.9 The purpose of these committees and review boards is to co-ordinate the required processes to ensure that the operations of the company and its sub-contractors are as safe as reasonably practicable.

3.3.4.10 A quarterly meeting is a reasonable and practical timetable. This can be reviewed as the committee's activities (and those of the company) develop. An extraordinary meeting may be called at any other time the Chairman considers it necessary (following a major incident, for example).

3.3.4.11 Meetings should be arranged on a regular basis and the schedule published well in advance, ideally a year. The circulation list should include members' secretaries and Crew Scheduling for flight crew members. Scheduled meetings should be re-notified two weeks before the appointed day.

3.3.5 Agenda

3.3.5.1 The agenda should be prepared early and distributed with the two-week notification. Solicit members for items they wish to be included for discussion, and make it known that only published agenda items will be discussed.

3.3.5.2 An example format that allows the Chairman to exercise proper control is:

- Review the minutes of the previous meeting
- Review of events (incl. incidents/accidents)
- MORs since the last meeting
- New business

3.3.5.3 Have spare copies of the agenda and any relevant documents to hand at the start of the meeting.

3.3.6 Summary

- Notify meetings and distribute the agenda well in advance
- Place a time limit on the proceedings - start and finish on time
- Discuss only agenda items - summarise frequently
- When collective agreement on a particular issue is reached, write it down for publication in the minutes
- Keep the meeting flowing. Its purpose is to present reasoned, collective judgement

- Do not let arguments develop or allow members to return to items already closed
- Make sure that the minutes are an accurate record of the committee's conclusions
- Always let the committee know when action items are completed
- Ban mobile telephones from the meeting room!

3.4 HAZARD REPORTING

- 3.4.1 Staff must be able to report hazards or safety concerns as they become aware of them. The ongoing hazard reporting system should be non-punitive, confidential, simple, direct and convenient. Once hazards are reported they must be acknowledged and investigated. Recommendations and actions must also follow to address the safety issues.
- 3.4.2 There are many such systems in use. The reporting form for the Australian Transport Safety Bureau (ATSB) Confidential Aviation Incident Reporting (CAIR) system could be adapted for this purpose (example reporting forms are provided in Appendix A). Ensuring a confidential and non-punitive system will encourage reporting of hazards. It should also allow for the reporting of hazards associated with the activities of any contracting agency where there may be a safety impact. The system should include a formal hazard tracking and risk resolution process. Hazards should be defined in a formal report. The report should be tracked until the hazard is eliminated or controlled to an acceptable risk. The controls should also be defined and should be verified as formally implemented.
- 3.4.3 What hazards should staff report?
- 3.4.3.1 All staff should know what hazards they are required to report. Any event or situation with the potential to result in significant degradation of safety and can cause damage and/or injury should be reported.
- 3.4.4 How will staff report hazards?
- 3.4.4.1 The Company might like to use existing paperwork, such as the pilot's report, for flying operations. It is easy to provide a dedicated reporting form for other functional areas. Make sure that reports are acted upon in a timely manner by the person responsible for your safety program.
- 3.4.4.2 In a small organisation it may be difficult to guarantee the confidentiality of safety reports, so it is vital that a trusting environment is fostered by management. Make the reporting system simple and easy to use. Suggested reports:
- Pilot's report
 - Hazard/safety report form
- 3.4.4.3 The reporting system should maintain confidentiality between the person reporting the hazard and the Flight Safety Officer. Any safety information distributed widely as a result of a hazard report must be de-identified.

SECTION 9 – CABIN SAFETY

9.1 SCOPE

- 9.1.1 This section of the OFSH was developed to provide information to supplement the Flight Safety programme and provide the Flight Safety Officer information related to cabin safety issues and personnel. This section is to be used as a quick reference for the Flight Safety Officer and to guide the Cabin Safety Investigator on the policies and processes of their duties. The Flight Safety Officer and Cabin Safety Investigator should refer to a companion document, the *Cabin Safety Compendium (CSC)*, also developed by the Aviation Operator's Safety Practices Working Group of the GAIN Programme. The CSC provides detailed information and guidelines on cabin safety to establish and support the Company flight safety programme.

9.2 CABIN SAFETY INVESTIGATOR

9.2.1 Mission Statement

- 9.2.1.1 The Cabin Safety Investigator will define the parameters and role of the Cabin Safety Department. The Cabin Safety Investigator will also identify issues related to Cabin Crew and passenger safety, determine stakeholders, agree on the validity of an issue, and assist to facilitate change.

9.2.2 Position Description

- 9.2.2.1 The Cabin Safety Investigator reports through the flight safety programme's office and represents the flight safety programme on issues which may affect the Cabin Crew and/or passenger in the cabin of the airplane whilst in the flight environment (block to block).

9.2.3 Required Experience

- 9.2.3.1 Experience in any of the following areas is pertinent to the position of Cabin Safety Investigator:

- Cabin Crew experience
- Pilot experience
- Engineering background
- Aircraft/employee accident investigation
- Operational experience
- Weather knowledge
- Education in safety and/or aviation safety
- Emergency evacuation qualified in all fleet types

9.2.4 Position Responsibilities

- 9.2.4.1 The Cabin Safety Investigator will act as a consultant to the operating divisions on cabin safety issues and act as a representative of the flight safety programme. The Cabin Safety Investigator responsibilities include the following:

- Facilitate/coordinate Cabin Crew safety debriefings

- Provide investigative and design expertise in areas which directly affect the aircraft cabin environment
 - Review procedures/analyse incidents/submit recommendations for improvement
 - Coordinate findings with the Flight Safety Officer, if applicable
 - Coordinate resolution of identified prevention techniques with the appropriate divisions
 - Obtain agreement and responsibility for the findings from the operating division (Note that the operating division must be responsible for the issue)
- Coordinate the development of future procedures and policies to ensure overall cabin safety for Cabin Crew and passengers
 - Partner with the operating division to trend Cabin Crew and passenger injuries and assist in determining methods to reduce them
 - Assist the operating division in analysing employee injuries
- Remain apprised of industry safety related issues throughout the world
 - Ensure the operating divisions are aware of pending legislation and trends which may affect the Company
 - Become active in industry organisations which have an impact on the safety issues and the formation of regulation which may affect cabin safety
- Establish a safety assessment system to evaluate key safety issues
 - The operating division must be responsible to establish a quality control system
 - The flight safety programme may assist the operating divisions by providing consultation as requested in areas related to the area of expertise
 - Determine what area of the Company will be accountable for quality assurance; quality assurance will assess the performance of the operating divisions based on established criteria
- Liaise with the following groups within the organisation:
 - Regulatory
 - Quality assurance
 - Passenger service
 - Labour organisations (passenger service & cabin crew)
 - Flight safety
 - Flight operations
 - Medical
 - Engineering
 - Marketing
- Liaise with regulatory and accident investigation authorities outside the organisation
 - Establishing a Company contact for outside authorities will expedite responses to requests and reduce confusion within both organisations
- Ensure Cabin Safety Manual Addendum revisions are approved and issued by the flight safety programme and regular reviews of the manual are established
- Cabin Investigations
 - Establish criteria of “must” investigate incidents based on Company policy and regulatory requirements (e.g. broken bones, hospitalisation)
 - Investigation requests may be initiated by any stakeholder
 - Establish a process which is acceptable to all participants; provide a written document supporting your processes to all departments that may have involvement and obtain an agreement on the submitted processes
 - The cabin investigation process must be discipline-free in order to obtain the maximum benefit from the program

- Maintain a current organisation chart and document the cabin safety role within the organisation and Company
- Safety Communication
 - Establish an effective method of communicating critical safety-related issues to Cabin Crew (e.g., NOTAMs, and Cabin Crew Notice procedure)
 - Provide Cabin Crew with a means of reporting safety-related issues (some operators encourage Cabin Crew to use the ASR system)
 - Ensure the reporting system has a feedback loop (including newsletters)
 - Track and trend concerns and responses
 - Operational management needs to respond and be responsible for employee concerns regarding safety
 - Provide updates to the safety committees on relevant issues (see paragraph 3.3)
- Establish and maintain regular dialogue with labour counterparts to obtain feedback on cabin safety-related issues
- Encourage operating divisions to establish safety committees at the local level
 - Establish and maintain regular dialogue with labour counterparts to obtain feedback on cabin safety-related issues
 - Encourage operating divisions to establish safety committees at the local level
 - Membership should always include management and labour
 - Encourage participants to be proactive by looking for ways to improve safety
 - Establish a feedback loop to obtain information on issues relating to individual committees
 - Ensure local issues are shared with all locations to identify common occurrences before they escalate
 - Each committee must establish a system for providing an agenda, the recording of minutes and actioning of items
 - Each committee should assess the top 5 – 7 injuries in the cabin; the Cabin Safety Investigator should work with the committees to assess what elements and behaviours contributed to the injuries (identify “at risk” behaviour)

9.2.5 Accident Response

9.2.5.1 The Company Flight Safety Manual should include Cabin Crew issues in the accident response plan (see Section 6). The plan should ensure that personnel are designated to represent the Cabin Crew perspective in cases of serious accidents. Normally, these personnel will be appointed from the operating division.

9.2.5.2 The Flight Safety Officer should establish the responsibilities of the Cabin Safety Investigator within the organisation when an accident occurs.

- The Cabin Safety Investigation Guidelines presented in Appendix A of the CSC should be referenced and documented in the accident/incident manual
- Review paragraph 5.9 to determine necessary equipment and personal items to conduct an accident investigation

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Date of Incident

Aircraft registration	Flight number	Aircraft manufacturer and model

Aircraft operator e.g. company name	Aircraft owner	Aircraft hirer (if any)

<input type="checkbox"/> Air transport - passenger	<input type="checkbox"/> Flying training - solo	<input type="checkbox"/> Businesses	<input type="checkbox"/> Gliding	<input type="checkbox"/> Sports aviation
<input type="checkbox"/> Air transport - cargo	<input type="checkbox"/> Flying training - dual	<input type="checkbox"/> Agricultural	<input type="checkbox"/> Private	<input type="checkbox"/> Military
<input type="checkbox"/> Charter	<input type="checkbox"/> Other			

☐ VMC ☐ IMC

☐ Crew ☐ Passengers

Visibility	Wind	Cloud	Altitude of occurrence

Last departure point of flight	Time of departure	Next intended point of landing
	local	

☐ Aircraft standing ☐ Taxiing ☐ Takeoff ☐ En-route ☐ Manoeuvring ☐ Approach ☐ Landing

	1	2

All relevant documentation should be forwarded to CAIR. Include your suggestions on how to prevent similar occurrences.

Please enclose additional page/s as necessary.

Your name				Date	
Address					
Telephone		Facsimile		Internet email	

December 2001
Issue 2

Confidential Aviation Incident Reporting form

This Confidential Aviation Incident Reporting form may be used instead of the yellow Air Safety Accident or Incident Report form to report an incident or a safety deficiency (not accident) if the reporter has a particular reason to seek confidentiality.

When you have completed the report, please forward it to CAIR by one of the methods detailed below.

The Australian Transport Safety Bureau collects information for the purposes of enhancing aviation safety. The information is collected under the authority of section 19BA and 19BC of Part 2A of the *Air Navigation Act 1920*.

The Director of Air Safety Investigation (ATSB) guarantees to keep your identity confidential. Your personal details will not be recorded and receipt of your report will be acknowledged.

To enable us to contact you for clarification of details, to discuss what action to take on this report, to determine how best to de-identify your report, and acknowledge receipt, please provide your name and contact details.

Do not include contact details (such as a work phone number) that you do not wish us to call you on and please indicate if we are not to leave a message on an answering machine. Include the best times for phone contact.

No action is taken on anonymous reports.

No postage stamp is required if this form and any other material are mailed.

RETURN TO ATSB

Mail address:
Reply Paid 22
The Manager
PO Box 600
Civic Square, ACT 2608

Contact telephone number:
Australia-wide 24-hour toll-free
1800 020 505

Facsimile number:
(02) 6274 6461

Internet email:
cair@atsb.gov.au

Airman's Information Manual (AIM)

www.faa.gov/atpubs/AIM/

Also obtainable on CD-ROM.

Aviation Supplies and Academics
7005 132nd Place SE
Newcastle, Washington 9059-3153
USA.

Web: www.asa2fly.com/asa

Joint Aviation Authorities Europe Requirements
Saturnusstraat 8-10
PO Box 3000
2130 KA Hoofddorp
Netherlands

Fax: (31) (0) 23-5621714
Web: www.jaa.nl/jar/jar.html

Joint Aviation Requirements (JARs)

Can be ordered online at:
www.jaa.nl/catalogue/catalogue.html

The following publications contain useful information, which can be adapted to suit a particular operator's needs where the State does not provide an equivalent:

- The UK Civil Aviation Act
- The UK Air Navigation Order
- Air Operators Certificates - Information for Applicants and Holders
- The Mandatory Occurrence Reporting Scheme (CAP 382)
- JAR-OPS 1
- Training in the Handling and Carriage of Dangerous Goods (CAP 698)
- Ramp Safety Manual (CAP 642)

All the above (including a full catalogue of UK CAA publications), with the exception of the JAR-OPS 1, can be obtained from:

Westward Digital Ltd.
37 Windsor St.
Cheltenham, Gloucestershire, GL52 2DG
United Kingdom

Web: www.westward.co.uk
Fax: 44 (1242) 584139

Books that may be considered to be essential reading include:

Flying the Big Jets (Stanley Stewart)
The Final Call (Stephen Barlay)
How Safe is Flying? (Laurie Taylor)
The Naked Pilot and Handling the Big Jets (David Beatty)

Aviation Safety Programs - a Management Handbook, 2nd Edition (Richard H. Wood)
Aircraft Accident Investigation (Richard H. Wood and Robert W. Swegennis)
ICAO Accident Prevention Manual (ICAO Document 9422-AN/923)

Aviation accident information publications containing accident summaries, loss records and statistics can be obtained on subscription from:

Airclaims, Ltd.
Cardinal Point
Newall Rd.
Heathrow Airport, London, TW6 2AS
England

Web: www.airclaims.co.uk

Airbus Industrie specialist publications:

Coping with Long-Range Flying
Getting to Grips with CAT II/CAT III Operations
Getting to Grips with the Cost Index
Getting to Grips with ETOPS
Getting Hands-On Experience with Aerodynamic Deterioration
Required Navigation Performance

Obtainable from:

Airbus Industrie Customer Services
Airlines Operations Support
1, Rond Point Maurice Bellonte
31707 Blagnac Cedex
France.

Tel: +33 (0) 5 61 93 3015
Fax: +33 (0) 5 61 93 2968/4465
SITA: TLSB17X
Telex: AIRBU 530526 F
Web: www.airbus.com

Boeing Commercial Airplane Group information:

The Role of Human Factors in Improving Aviation
http://www.boeing.com/commercial/aeromagazine/aero_08/human.html

FOD Prevention Program
http://www.boeing.com/commercial/aeromagazine/aero_01/s/s01/index.html

Aging Airplane Systems
http://www.boeing.com/commercial/aeromagazine/aero_07/agingair.html

Promoting Future Aviation
http://www.boeing.com/commercial/safety/safe_future.htm

Contact information:

Boeing Commercial Airplane Group
Boeing Airplane Services,
P.O. Box 3707,
MC 7R-72,
Washington 98124-2207
USA

Tel: +1 425-865-7950
Fax: +1 425-865-7896
Email: airplaneservices@boeing.com
Web: www.boeing.com

INDUSTRY ORGANISATIONS

African Aviation Safety Council (AFRASCO)
PO Box 19085
Nairobi
Kenya

Tel: +254 2 823000 x2083
Fax: +254 2 823486

The regional air safety organisation for Eastern, Central and Southern Africa (formerly known as ECASAFI).

Air Transport Association of America (ATA)
1301 Pennsylvania Avenue NW
Suite 1100
Washington DC 20004-1707
USA

Tel: +1 202 626 4015
Fax: +1 202 626 4019
Web: www.air-transport.org

The trade and service organisation of U.S. airlines.

Arab Air Carriers Organisation (AACO)
PO Box 13-5468
Beirut
Lebanon

Tel: +961 1 861297
Fax: +961 1 603140
SITA: BEYXAXD
Web: www.aaco.org

The trade and service association for Arab airlines. Contact the Secretary General.

Association of Asia Pacific Airlines (APAA), Secretariat
S/F, Corporate Business Centre
151 Paseo de Roxas, 1225 Makati,
Metro Manila
The Philippines

Email: orienta@asiaonline.net
Web: www.aapa.org.ph

The trade and service association for major Asian airlines. Contact the Secretariat.

Australian Transport Safety Bureau (ATSB)
Department of Transport and Regional Services
PO Box 967
Civic Square, ACT 2608
Australia

Tel: +61(0) 2-6274 7111
+61(0) 6-257 4150
Fax: +61(0) 2-6274 6474
Web: www.atsb.gov.au/aviation

Australia's government air accident investigating authority. Publishes periodic reviews of aircraft accidents and incidents in its '*Asia-Pacific AIR SAFETY*' journal.

Flight Safety Foundation
601 Madison Street, Suite 300
Alexandria, VA 22314
USA

Tel: +1 703 739 6700
Fax: +1 703 739 6708
Web: www.flightsafety.org

A non-profit organisation founded in the 1940s. It offers an impartial clearinghouse to disseminate objective safety information and promotes major flight safety seminars globally. The FSF also publishes seven scheduled periodicals and engages in special projects and studies to identify threats to safety, research problems and recommend practical solutions.

International Air Transport Association
800 Place Victoria
PO Box 113
Montreal, Quebec H4Z 1M1
Canada

Tel: +1 (514) 874-0202
Fax: +1 (514) 874-9632
Web: www.iata.org

**International Association of Latin American
Air Carriers (AITAL)** (*Asociacion Internacional de
Transportadores Aereos Latinoamericanos*)

Apartado Aereo 98949

Bogota

Columbia

The regional air safety organisation for Latin America.

Tel: +57 1 2957972
Fax: +57 1 4139178
Email: aital@latino.net.co

**International Federation of Airline Pilots Association
(IFALPA), Interpilot House**

Gogmore Lane

Chertsey, Surrey, KT16 9AP

England

Contact the Executive Director.

Tel: +44 (0) 1932 571711
Fax: +44 (0) 1932 570920
email: admin@ifalpa.org
Web: www.ourworld.compuserve.com/hompages/ifalpa

National Transportation Safety Board (NTSB)

490 L'Enfant Plaza East, SW

Washington, DC 20594-2000

USA

The U.S. government agency responsible for the investigation of aircraft accidents. Refer to NTSB Regulation *Part 830*.

Tel: +1 202 314-6100
Web: www.nts.gov

Transportation Safety Board of Canada

Place du Centre

200 Promenade du Portage, 4th Floor

Hull, Quebec

Canada

The Canadian government air accident investigation authority.

Tel: +1 819 994 3741
Fax: +1 819 997 2239
Web: www.bst-tsb.gc.ca

UK Air Accidents Investigation Branch

Department of Transport

DRA Farnborough, Hampshire, GU14 6TD

England

The U.K. governments air accident investigating authority. Publishes a monthly list of aircraft accident reports.

Tel: +44 (0)1252-510300
Fax: +44 (0)1252-376999
Web: www.open.gov.uk/aaib

UK Civil Aviation Authority

Safety Data Department

Aviation House, Gatwick Airport South

West Sussex, RH6 0YR

England

Maintains the UK Civil Aviation Authority's occurrence database. Publishes a monthly list of reported occurrences, together with brief details and status, and an amplified digest of selected events. Available on subscription.

Tel: +44 (0)1293-573220
Fax: +44 (0)1293-573972
Web: www.caa.co.uk

The United Kingdom Flight Safety Committee

The Graham Suite, Fair Oaks Airport

Chobham, Woking, Surrey, GU24 8HX

England

Founded in 1959. Composed of experienced flight safety professionals drawn from UK airlines and associated industry agencies. The Committee, whose aim is to pursue the highest standards

Tel: +44 (0)1276-855193
Fax: +44 (0)1276-855195
Email: KFSC@compuserve.com

of flight safety for public transport operations, meets formally eight times a year. Full membership is available to European airlines and professional associations, and affiliated membership is offered to non-European airlines. Contact the Executive Secretary for details.

International Society of Air Safety Investigators
Technology Trading Park
Five Export Drive
Sterling, VA 20164-4421
USA

Tel: +1 703 430 9668
Fax: +1 703 450 1745
Email: hq@isasi.org
Web: www.isasi.org

TRAINING ORGANISATIONS

The following reputable institutions provide formal courses in Flight Safety Management, Aircraft Accident Investigation and allied subjects. Courses are usually residential and vary from two to six week's duration:

Cranfield College of Aeronautics,
Cranfield, Bedfordshire, MK43 0AL Web: www.cranfield.ac.uk/coa/tech-atm.avsafety.htm
England

Tel: +44-1234-750111

SAS Flight Academy
SE-19587, Stockholm
Sweden

Tel: +46-8-797-4242
Fax: +46-8-797-4241
Web: www.sasflightacademy.nu

Southern California Safety Institute (SCSI)
3838, Carson St.
Suite 105, Torrance CA 90503
USA

Tel: +1 (310) 540 2162
Fax: +1 (310) 540-0532
Email: scsi@ix.netcom.com
Web: www.scsi-int.com

Embry-Riddle Aeronautical University
600 S. Clyde Morris Boulevard
Daytona Beach FL 32114-3900
USA

Tel: 1-800-222-3728
Email: admit@db.erau.edu
Web: www.erau.edu

(Graduate and undergraduate courses are available from SCSI and Embry-Riddle)

Accident Investigation Bureau
Lisbon
Portugal

(Courses conducted in Portuguese)

Institut Francais de Securite Aerienne
2, Place Rio de Janeiro
75008 Paris
France

Tel: +33 1 44 95 29 41
Fax: +33 1 44 95 29 41

Courses conducted in French

Institute of Aviation Safety (IAS)
c/o Swedavia/Luftfartsverket
S-601 79 Norrköping
Sweden

Tel: +46 11 192000
Fax: +46 11 130711
Email: swedavia@swedavia.lfv.se
Web: www.swedavia.com

Courses conducted in English

University of Southern California
Aviation Safety Program
Los Angeles, CA 90089-8001
USA

Tel: +1 213 743-4555
Fax: +1 213 748 6342
Email: barr@bcf.usc.edu
Web: www.usc.edu/dept/engineering/AV.html

Specialised training in cabin safety and associated research is available from:

The Civil Aeromedical Institute (CAMI)
FAA-AAM-630
PO Box 25082
Oklahoma City, OK 73125
USA

Tel: +1 405 954 5522
Fax: +1 405 954 4984
Web: www.cami.jccbi.gov

Hands-on instruction is provided in the use of cabin and cockpit safety equipment (oxygen systems and equipment, fire-fighting equipment, personal survival equipment, etc). There are also practical aircraft slide evacuation and ditching exercises and live decompression training - probably the only decompression training facility accessible to the civil aviation community. The three-day (non-residential) course is free. Participants must be in possession of a current FAA Class 3 medical certificate (or equivalent) to be accepted for decompression training.

MANUFACTURER INFORMATION

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1 Rond Point Maurice Bellonte
31707 Blagnac Cedex
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GMT +1

Boeing Commercial Airplane Group (BCAG)
P.O. Box 3707 Mail Stop 14-HM
Seattle, WA 98124
USA
General Office
Pager
24hr Switchboard

GMT -8

(206) 655 8525
(206) 986 6327
(206) 655 2121

Bombardier Aerospace
P.O. Box 6087
Station Centre-ville
Montréal, Québec H3C 3G9
Canada

GMT -5

Tel: 1 (514) 855-5000
Fax: 1 (514) 855-7401

Cessna Aircraft Company
Mid-Continent Facility (Corporate Offices)
P.O. Box 7704
1 Cessna Blvd.
Wichita, KS 67215
USA
Corporate Office

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(316) 517-6000

de Havilland

GMT -5

123 Garratt Blvd.

Downsview, Ontario M3K 1 Y5

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(416) 633-7310

After Hours Technical Help Desk Toronto

(416) 375-4000

After Hours Technical Help Desk Montreal

(514) 855-8500

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12227-901 - S. Jose dos Campos - SP

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The Netherlands**GE Aircraft Engines**

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(513) 243 4659

(513) 243 4660

Lockheed Aeronautical Systems Company

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86 South Cobb Drive

Marietta, GA 30063-0444

USA

General Office

(404) 494 4861

Pratt and Whitney Aircraft Engines

GMT -5

400 Main St.

East Hartford, CT 06108

USA

24 Hour number

(203) 727 2000

Rolls Royce Aircraft Engines

GMT 0

P.O. Box 31

Derby DE2 8BJ

England

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(44 332) 248 232

SNECMA
Department Securite des Vols - YDES
Direction Technique
77550 Moissy Cramayel
France
General Office

GMT +1

33 1 60 59 82 54
33 1 60 59 98 91

SUPPLIERS OF FLIGHT/PERFORMANCE MONITORING SYSTEMS

AvSoft Ltd.
Myson House
Railway Terrace
Rugby
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Note : *The INDICATE Program software can be downloaded at no cost from the ATSB website, <http://www.atsb.gov.au/atsb/indicate/index.cfm>, or can be obtained from the above address.*

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INTERNET WEB SITES

Airbus Home Page	www.airbus.com
Aircraft/Fire Safety	www.fire.tc.faa.gov
Air Safety Home Page USA	www.airsafe.com
Arab Air Carriers Organisation (AACO)	www.aaco.org
Australian Transport Safety Bureau (ATSB)	www.atsb.gov.au/aviation
Aviation Link Index	www.connections.co.nz/squelch/aviation_links_page.htm
‘Aviation Week’	www.aviationnow.com
Boeing Home Page	www.boeing.com
Civil Aviation Aeromedical Institute (CAMI)	www.cami.jccbi.gov
Commercial Aviation Computer-related Incidents	www.rvs.uni-bielefeld.de/publications/Incidents/
EUROCONTROL	www.eurocontrol.be
Flight Safety Foundation	www.flightsafety.org
Global Aviation Information Network	www.gainweb.org
ICAO	www.icao.int
International Federation of Airworthiness	www.ifairworthy.org/
Swedish Board of Accident Investigation	www.havkom.se/english
Transportation Safety Board of Canada	www.tsb.gc.ca
UK Air Accident Investigation Branch	www.open.gov.uk/aaib/aaibhome.htm
UK AIC (Aeronautical Information Circulars)	www.ais.org.uk/publications.htm
University of Southern California	www.usc.edu/dep/issm/AV.html
US Aviation Safety Reporting System (ASRS)	www.olias.arc.nasa.gov/ASRS/ASRS
US Federal Aviation Administration (FAA)	www.faa.gov
US National Transportation Safety Board (NTSB)	www.nts.gov/Aviation/aviation

APPENDIX C

ANALYTICAL METHODS

&

TOOLS

The Analytical Methods & Tools Appendix provided in Issue 1 of the OFSH has been superseded by the report published by GAIN Working Group B, *Guide to Methods & Tools for Airline Flight Safety Analysis*, dated December 2001. This report is publicly available via the Working Group B page on the GAIN web-site at:

http://www.gainweb.org/Working%20Groups/WGB/working_group_b_.html.

E.3.1.1 Identify the Hazards

There are many ways of identifying hazards and quantifying risks, but success requires lateral thinking by people who are unencumbered by past ideas and experiences. The hazards of an operation may be obvious, such as lack of training, or they may be subtle, such as the insidious effects of long-term fatigue.

Each hazard, once identified, should be recorded without fear or favour.

Depending on the size and complexity of your operation, there are several useful methods of identifying hazards:

- Brainstorming - small discussion groups meet to generate ideas in a non-judgmental way
- Formal review of standards, procedures and systems
- Staff surveys or questionnaires
- One person standing back from the operation and critically watching
- Internally or externally conducted safety assessments
- Confidential reporting systems

Formal methods and techniques can be applied such as, system safety analysis, job safety analysis, energy trace and barrier analysis, procedure analysis checklists, and task analysis. There are a number of appropriate references for sources of analysis methods and techniques.¹

Small operator:

The small non-commercial operator simply needs to apply discipline and allocate time to critically look at all facets of the company's operations and systems, and identify the hazards. You need to take action to either eliminate the hazards where possible, or vary the operation, or change a design in some practical way that will offer protection from the hazards and their associated risks in order to ensure acceptable risk.

Medium-large operator/airline:

Establishing discussion groups with as many staff and line managers as practical is a good method to identify hazards. The group discussions will also encourage staff to become more actively involved in establishing your safety program.

The purpose of the discussion groups is to provide a structured method of identifying those hazards and risks, which are most likely to cause injury or damage. The number of participants will depend on the size of the organisation, probably three or four for a medium company and up to eight people for a regional airline.

It is a good idea to have a number of groups each representing the various functional areas, i.e. flight operations, ground crew, maintenance and engineering, pilots and cabin crew. Each group should run with participants from the same functional area, e.g. all pilots or all engineers, and so on.

¹ Hazard Analysis Handbook, International System Safety Society 2nd Edition.
Appendix E: Risk Management Process

One example of a system for proactively identifying hazards is the ATSB-INDICATE program. It describes how to set up groups and conduct a basic process for identifying safety hazards by following five simple steps:

- Identify potential airline hazards that may threaten the safety of passengers
- Rank the severity of hazards
- Identify current defences
- Evaluate the effectiveness of each defence
- Identify additional defences.

E.3.1.2 Assess The Hazards

The next step in the process is to critically assess the hazards and rank risks. Factors to consider are the likelihood of the occurrence and the severity of the consequences.

For example; an extensive in-flight fire may be an unlikely occurrence which would be catastrophic if it were to occur. It would rank above a bird strike which, although much more likely to occur, may be less severe. There are various ways of doing this type of assessment. They range from the subjective to the very analytical and objective.

E.3.1.3 Identify The Defences

Once the hazards are identified and their risks approximately ranked, the defences (hazard controls) which exist to protect against the hazards should be identified.

Examples:

- A defence against an in-flight fire may be a fire extinguisher
- A defence against particular hazards would be to ensure that operating procedures are properly documented and implemented with compliance
- Automated caution and warning systems and contingency response

E.3.1.3 Assess The Defences

The appropriateness of hazard controls is then assessed. How effective are the hazard controls? Would they prevent the occurrence (i.e. do they remove the hazard), or do they minimise the likelihood or the consequence? If the latter, to what extent is this true? An example of determining the effectiveness of a hazard control is to ask the question: Does the crew know how to use the fire extinguishers and are the extinguishers correctly maintained?

E.3.1.5 Identify The Need For Hazard Elimination And Avoidance Or For Further Defences

Finally, each hazard and its hazard control need to be critically examined to determine whether the risk is appropriately managed or controlled. If it is, the operation may continue. If not, then steps should be taken to improve the hazard control or to remove or avoid the hazard. For example, an operator may provide recurrent training for crew in the correct use of fire extinguishers. In some instances, a range of solutions to a risk may be available. Some are typically engineering solutions (e.g. redesign) which are generally the most effective, but may be expensive. Others involve control (e.g. operating

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